

SEQUENCE LISTING

<110> Long, Li
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 Yabannavar, Asha
 Zaror, Isabel

<120> USE OF ANTAGONISTIC ANTI-CD40 ANTIBODIES
 FOR TREATMENT OF AUTOIMMUNE AND INFLAMMATORY DISEASE AND ORGAN
 TRANSPLANT REJECTION

<130> PP23725.001 (284072)

<150> 60/565,710
<151> 2004-04-27

<150> 60/525,579
<151> 2003-11-26

<150> 60/517,337
<151> 2003-11-04

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 720
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence for light chain of CHIR-12.12
 human anti-CD40 antibody

<221> CDS
<222> (1)...(720)

<400> 1
atg gcg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc tct 48
Met Ala Leu Pro Ala Gln-Leu Leu Gly Leu Leu Met Leu Trp Val Ser
1 5 10 15

gga tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctg acc 96
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr
20 25 30

gtc acc cct gga gag ccg gcc tcc atc tcc tgc agg tcc agt cag agc 144
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
35 40 45

ctc ctg tat agt aat gga tac aac tat ttg gat tgg tac ctg cag aag 192
Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys
50 55 60

cca ggg cag tct cca cag gtc ctg atc tct ttg ggt tct aat cgg gcc 240
Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala
65 70 75 80

tcc ggg gtc cct gac agg ttc agt ggc agt gga tca ggc aca gat ttt 288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
85 90 95

aca ctg aaa atc agc aga gtg gag gct gag gat gtt ggg gtt tat tac 336
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr

100	105	110	
tgc atg caa gct cga caa act cca ttc act ttc ggc cct ggg acc aaa Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys 115 120 125			384
gtg gat atc aga cga act gtg gct gca cca tct gtc ttc atc ttc ccg Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro 130 135 140			432
cca tct gat gag cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu 145 150 155 160			480
ctg aat aac ttc tat ccc aga gag gcc aaa gta cag tgg aag gtg gat Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp 165 170 175			528
aac gcc ctc caa tcg ggt aac tcc cag gag agt gtc aca gag cag gac Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp 180 185 190			576
agc aag gac agc acc tac agc ctc agc agc acc ctg acg ctg agc aaa Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys 195 200 205			624
gca gac tac gag aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln 210 215 220			672
ggc ctg agc tcg ccc gtc aca aag agc ttc aac agg gga gag tgt tag Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys * 225 230 235			720

<210> 2
<211> 239
<212> PRT
<213> Artificial Sequence

<220>
<223> Light chain of CHIR-12.12 human anti-CD40 antibody

Met Ala Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Ser 1 5 10 15	
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr 20 25 30	
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 35 40 45	
Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys 50 55 60	
Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala 65 70 75 80	
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe 85 90 95	
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 100 105 110	
Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys 115 120 125	
Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro 130 135 140	
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu 145 150 155 160	
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp	

165	170	175
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp		
180	185	190
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys		
195	200	205
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln		
210	215	220
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys		
225	230	235

<210> 3

<211> 2016

<212> DNA

<213> Artificial Sequence

<220>

<223> Coding sequence for heavy chain of CHIR-12.12
human anti-CD40 antibody (with introns)

<400> 3

atggagtttg ggctgagctg ggtttcattt gttgctattt taagagggtgt ccagtgtcag 60
gtgcagttgg tggagtctgg gggaggcgtg gtccagcctg ggagggtccct gagactctcc 120
tgtgcagccct ctggattcac cttcagtagc tatggcatgc actgggtccg ccaggctcca 180
ggcaagggggc tggagtgggt ggcagttata tcataatgagg aaagtaatag ataccatgca 240
gactccgtga agggccgatt caccatctcc agagacaatt ccaagatcac gctgtatctg 300
caaataacaac gcctcagaac tgaggacacg gctgtgtatt actgtgcgag agatgggggt 360
atacagcac ctgggctgtca tcactggggc cagggAACCC ttgtcaccgt ctccctcagca 420
agtaccaagg gccccatccgt cttcccccgt ggcggcgta gcaagagcac ctctgggggc 480
acagcggccc tgggctgcct ggtcaaggac tacttcccccgt aaccgggtac ggtgtcggtgg 540
aactcaggcg ccctgaccag cgccgtgcac accttcccccgt ctgtccataa gtccctcaggaa 600
ctctactccc tcagcagcgat ggtgaccgtg ccctccagca gcttgggcac ccagacctac 660
atctgcaacg tgaatcacaa gcccagcaac accaagggtgg acaagagagt tggtagagg 720
ccagcacagg gagggagggt gtctgctgaa agccaggctc agcgctctg cctggacgca 780
tcccggttat gcaatcccgt tccaggcggc caaggcaggc cccgtctgccc tcttcaccctg 840
gaggcctctg cccggccccac tcatacgttcg ggagagggtc ttctggcttt ttcccaggc 900
tctggcagg cacaggctag gtccccctaa cccaggcccgt gcacacaaaag gggcagggtgc 960
tgggctcaga cctgccaaga gccatccgt ggaggaccctt gcccgttacc taagcccacc 1020
ccaaaggcca aactctccac tccctcagct cggacaccctt ctctccccc agatcccgat 1080
aactcccaat ctctctctcg cagggcccaa atcttgcac aaaactcaca catgcccacc 1140
gtgcccaggat aagccagccc aggccgtccctt ccctcagctca aggccggaca ggtggccctag 1200
agtacccctgc atccaggggac aggccccagc cgggtgtcata cacgtccacc tccatctctt 1260
cctcagcacc tgaactcctg gggggaccgt cagtcttccctt cttcccccataa aaaaaaagg 1320
acaccctcat gatctcccggtt acccctgagg tcacatgcgt ggtgggtggac gtgagccacg 1380
aagaccctgtca ggtcaagttc aacttgcgtc tggacggcgtt ggaggtgtcat aatgccaaga 1440
caaagcccgcg ggaggagcag tacaacagca cgtaccgtgt ggtcagcgcc ctcaccgtcc 1500
tgcaccaggat ctggctgaat ggcaggagt acaagtgcac ggtctccaaac aaaggccctcc 1560
cagcccccattt cgagaaaaacc atctccaaag cccaaagggtgg gacccgtggg gtgcgaggggc 1620
cacatggaca gaggccgggtt cggccacccctt tctggccctgtca gaggccgttgc tgcaccaacc 1680
tctgtccctta caggcccgcc cccggaaacca cagggtgtaca ccctggccccc atccccgggg 1740
gagatgacca agaaccaggat caggccgttccctt tggccgttca aaggcttctta tccctccggac 1800
atcgccgtgg agtggggagag caatggggcgtt cccggagaaca actacaagac caccgcctccc 1860
gtgctggactt ccgcacggctt cttcttcctt tatacgacgc tcaccgttca caagaggcagg 1920
tggcaggcagg ggaacgttccctt tccatgttccctt gtgtatgtcatg aggctctgtca caaccactac 1980
acgcagaaga ggctctccctt gtctccgggtt aatataa 2016

<210> 4

<211> 469

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of CHIR-12.12 human anti-CD40 antibody

<400> 4

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly

1	5	10	15
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly	Gly Val Val Gln		
20	25	30	
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser	Gly Phe Thr Phe		
35	40	45	
Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro	Gly Lys Gly Leu		
50	55	60	
Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn	Arg Tyr His Ala		
65	70	75	80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp	Asn Ser Lys Ile		
85	90	95	
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu	Asp Thr Ala Val		
100	105	110	
Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro	Gly Pro Asp Tyr		
115	120	125	
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala	Ser Thr Lys Gly		
130	135	140	
Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys Ser	Thr Ser Gly Gly		
145	150	155	160
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe	Pro Glu Pro Val		
165	170	175	
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly	Val His Thr Phe		
180	185	190	
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu	Ser Ser Val Val		
195	200	205	
Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr	Ile Cys Asn Val		
210	215	220	
Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg	Val Glu Pro Lys		
225	230	235	240
Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro	Ala Pro Glu Leu		
245	250	255	
Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys	Pro Lys Asp Thr		
260	265	270	
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val	Val Val Val Asp Val		
275	280	285	
Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr	Val Asp Gly Val		
290	295	300	
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Gln	Tyr Asn Ser		
305	310	315	320
Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His	Gln Asp Trp Leu		
325	330	335	
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys	Ala Leu Pro Ala		
340	345	350	
Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln	Pro Arg Glu Pro		
355	360	365	
Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met	Thr Lys Asn Gln		
370	375	380	
Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro	Ser Asp Ile Ala		
385	390	395	400
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn	Tyr Lys Thr Thr		
405	410	415	
Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu	Tyr Ser Lys Leu		
420	425	430	
Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val	Phe Ser Cys Ser		
435	440	445	
Val Met His Glu Ala Leu His Asn His Tyr Thr Gln	Lys Ser Leu Ser		
450	455	460	
Leu Ser Pro Gly Lys			
465			

<210> 5

<211> 469

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of variant of CHIR-12.12 human
anti-CD40 antibody

<400> 5

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly
 1 5 10 15
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile
 85 90 95
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr
 115 120 125
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
 130 135 140
 Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly
 145 150 155 160
 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
 165 170 175
 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
 180 185 190
 Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
 195 200 205
 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val
 210 215 220
 Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
 225 230 235 240
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 245 250 255
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 260 265 270
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 275 280 285
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 290 295 300
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
 305 310 315 320
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 325 330 335
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
 340 345 350
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 355 360 365
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
 370 375 380
 Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 385 390 395 400
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 405 410 415
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 420 425 430
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 435 440 445
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 450 455 460
 Leu Ser Pro Gly Lys
 465

<210> 6
<211> 239
<212> PRT
<213> Artificial Sequence

<220>
<223> Light chain of CHIR-5.9 human anti-CD40 antibody

<400> 6
Met Ala Leu Leu Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
1 5 10 15
Gly Ser Ser Gly Ala Ile Val Met Thr Gln Pro Pro Leu Ser Ser Pro
20 25 30
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
35 40 45
Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg
50 55 60
Pro Gly Gln Pro Pro Arg Leu Leu Ile Tyr Lys Phe Phe Arg Arg Leu
65 70 75 80
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe
85 90 95
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
100 105 110
Cys Met Gln Val Thr Gln Phe Pro His Thr Phe Gly Gln Gly Thr Arg
115 120 125
Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
130 135 140
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
145 150 155 160
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
165 170 175
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
180 185 190
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
195 200 205
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
210 215 220
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230 235

<210> 7
<211> 474
<212> PRT
<213> Artificial Sequence

<220>
<223> Heavy chain of CHIR-5.9 human anti-CD40 antibody

<400> 7
Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val Leu Gln Gly
1 5 10 15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe
35 40 45
Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
50 55 60
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser
65 70 75 80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
85 90 95
Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
100 105 110
Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr

115	120	125
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val	Thr Val Ser Ser	
130	135	140
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro	Ala Ser Lys	
145	150	155
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val	Lys Asp Tyr	
165	170	175
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala	Leu Thr Ser	
180	185	190
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser	Gly Leu Tyr Ser	
195	200	205
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser	Leu Gly Thr Gln Thr	
210	215	220
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr	Lys Val Asp Lys	
225	230	235
Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr	Cys Pro Pro Cys	
245	250	255
Pro Ala Pro Glu Leu Leu Gly Pro Ser Val Phe Leu	Phe Pro Pro	
260	265	270
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro	Glu Val Thr Cys	
275	280	285
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val	Lys Phe Asn Trp	
290	295	300
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys	Thr Lys Pro Arg Glu	
305	310	315
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val	Leu Thr Val Leu	
325	330	335
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys	Lys Val Ser Asn	
340	345	350
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser	Lys Ala Lys Gly	
355	360	365
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro	Pro Ser Arg Glu Glu	
370	375	380
Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val	Lys Gly Phe Tyr	
385	390	395
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn	Gly Gln Pro Glu Asn	
405	410	415
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp	Gly Ser Phe Phe	
420	425	430
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp	Gln Gln Gly Asn	
435	440	445
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His	Asn His Tyr Thr	
450	455	460
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys		
465	470	

<210> 8

<211> 474

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of variant CHIR-5.9 human anti-CD40 antibody

<400> 8

Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val	Leu Gln Gly		
1	5	10	15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala	Glu Val Lys Lys		
20	25	30	
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser	Gly Tyr Ser Phe		
35	40	45	
Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro	Gly Lys Gly Leu		
50	55	60	
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp	Thr Arg Tyr Ser		

65	70	75	80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser			
85	90	95	
Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met			
100	105	110	
Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr Tyr			
115	120	125	
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser			
130	135	140	
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys			
145	150	155	160
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr			
165	170	175	
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser			
180	185	190	
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser			
195	200	205	
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr			
210	215	220	
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys			
225	230	235	240
Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys			
245	250	255	
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro			
260	265	270	
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys			
275	280	285	
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp			
290	295	300	
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu			
305	310	315	320
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu			
325	330	335	
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn			
340	345	350	
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly			
355	360	365	
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu			
370	375	380	
Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr			
385	390	395	400
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn			
405	410	415	
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe			
420	425	430	
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn			
435	440	445	
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr			
450	455	460	
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys			
465	470		

<210> 9
<211> 612
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(612)

<221> misc_feature
<222> (0)...(0)
<223> Coding sequence for short isoform of human CD40

<400> 9
atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc 48
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
1 5 10 15

gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
20 25 30

ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45

agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
50 55 60

agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
65 70 75 80

aaa tac tgc gac ccc aac cta ggg ctt cggt gtc cag cag aag ggc acc 288
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
85 90 95

tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
100 105 110

agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc 384
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
115 120 125

ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag 432
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
130 135 140

ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa 480
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
145 150 155 160

tgt cac cct tgg aca agg tcc cca gga tcg gct gag agc cct ggt ggt 528
Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly
165 170 175

gat ccc cat cat ctt cgg gat cct gtt tgc cat cct ctt ggt gct ggt 576
Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly
180 185 190

ctt tat caa aaa ggt ggc caa gaa gcc aac caa taa 612
Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln *
195 200

<210> 10
<211> 203
<212> PRT
<213> Homo sapiens

<400> 10
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr 1 5 10 15
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
20 25 30
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45

Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
 50 55 60
 Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
 65 70 75 80
 Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
 85 90 95
 Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
 100 105 110
 Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
 115 120 125
 Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
 130 135 140
 Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
 145 150 155 160
 Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly
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 Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly
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 Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln
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gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96
 Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
 20 25 30

ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144
 Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
 35 40 45

agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192
 Ser Asp Cys Thr Glu Phe Thr Glu Thr Cys Leu Pro Cys Gly Glu
 50 55 60

agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240
 Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
 65 70 75 80

aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc 288
 Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
 85 90 95

tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336
 Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
 100 105 110

agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc 384
 Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly

115	120	125	
ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu 130 135 140			432
ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys 145 150 155 160			480
tgt cac cct tgg aca agc tgt gag acc aaa gac ctg gtt gtg caa cag Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln 165 170 175			528
gca ggc aca aac aag act gat gtt gtc tgt ggt ccc cag gat cgg ctg Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu 180 185 190			576
aga gcc ctg gtg gtg atc ccc atc atc ttc ggg atc ctg ttt gcc atc Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile 195 200 205			624
ctc ttg gtg ctg gtc ttt atc aaa aag gtg gcc aag aag cca acc aat Leu Leu Val Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn 210 215 220			672
aag gcc ccc cac ccc aag cag gaa ccc cag gag atc aat ttt ccc gac Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp 225 230 235 240			720
gat ctt cct ggc tcc aac act gct gct cca gtg cag gag act tta cat Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His 245 250 255			768
gga tgc caa ccg gtc acc cag gag gat ggc aaa gag agt cgc atc tca Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser 260 265 270			816
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Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
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Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
50 55 60
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
65 70 75 80
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
85 90 95
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
100 105 110
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
115 120 125
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu

130	135	140
Pro	Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys	
145	150	155
Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln		160
165	170	175
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu		
180	185	190
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile		
195	200	205
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn		
210	215	220
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp		
225	230	235
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His		240
245	250	255
Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser		
260	265	270
Val Gln Glu Arg Gln		
275		